19981015.ba v02_n258.bam.981015 v02_n259.bam.981015

>From ???@??? Thu Oct 15 05:08:23 1998
Message-Id: <199810150633.BAA10495@sco.theporch.com>
Date: Thu, 15 Oct 1998 01:32:12 CDT
Subject: BOATANCHORS digest 2258

BOATANCHORS Digest 2258

Topics covered in this issue include:

1) Re: Postings for the RA6790/GM
   by Ed Tanton <n4xy@att.net>
2) Re: Postings for the RA6790/GM
   by "Arden Allen" <gumbear@pacbell.net>
3) Re: FS Hallicrafters SX-100 Receiver
   by Sandra L Knepper <slkst29+@pitt.edu>
4) Used 866 Tubes
   by Don <71333.144@compuserve.com>
5) Old 866's etc
   by w2ec@VNET.IBM.COM
6) NEED: Racal RA-63H man/sch
   by "JOSE V. GAVILA (EB5AGV/EC5AAU)" <eb5agv@ctv.es>
7) Re: Radio Instrument History Question?
   by "Roberta J. Barmore" <rbarmore@indy.net>
8) WTB: Transmitter
   by "Freeberg, Scott (STP)" <scott.freeberg@guidant.com>
9) 10 Meters Jumping!
   by "Christopher A. Bowne" <radiobwn@riconnect.com>
10) Knight T-150/A?
   by "Ed Santavicca" <santavic@ct.picker.com>
11) Illinois ARC meet 10/18
   by Norm Flasch <flasch@cushy.ece.nwu.edu>
12) Need manuel
   by "James F. Wood 253-7886" <WOODJ@mail.firn.edu>
13) Raytrack Manual
   by JIM_ALLEN@HP-Cupertino-om5.om.hp.com
14) 23D4 Ballast Tubes
   by David Stinson <arc5@ix.netcom.com>
15) Cap Tester Needed
   by laffitte@prtc.net (laffitte)
16) 866 Tubes Flashover?
   by Don <71333.144@compuserve.com>
17) Forced air cooling of tubes
   by w2ec@VNET.IBM.COM
18) f/s SBE-34
   by "ROBERT F. KEMP" <rkemp@mr.net>
19) Nixie tubes

by rcote <rcote@pixi.com>
20) Nuvistors
by rcote <rcote@pixi.com>
21) Re: 866 Tubes Flashover?
by "Steve Hill" <SHILL@onaustralia.com.au>
22) Re: 866 Tubes Flashover?
by William Donzelli <william@ans.net>
23) Re: 866 Tubes Flashover?
by "Roberta J. Barmore" <rbarmore@indy.net>
24) Re: 866 Tubes Flashover?
by Ed Tanton <n4xy@att.net>
25) RECEIVER R-22 INFO. NEEDED
by PLT1032@aol.com
26) Gonset Osc/Monitor
by Edward Zeranski <ejz@nosc.mil>
27) Re: 866 Tubes Flashover?
by "Arden Allen" <gumbear@pacbell.net>
28) Re: B-17, B-24
by "Mark J. Blair" <mblair@gruumsh.irv.ca.us>

Message-Id: <3.0.5.32.19981014013616.02f90140@postoffice.worldnet.att.net>
Date: Wed, 14 Oct 1998 01:36:16 -0400
To: Old Tube Radios <boatanchors@theporch.com>
From: Ed Tanton <n4xy@att.net>
Subject: Re: Postings for the RA6790/GM
Cc: Old Tube Radios <boatanchors@theporch.com>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

At 12:02 AM 10/14/98 -0400, Al Klase wrote:
///snip
> I think we should accept these highly-sophisticated NON-CONSUMER radios
> as boatanchors in the same spirit as our discussions of sets like the
> HRO-500 in the past.
> What do you say, Jack?
>
> 73,
> Al
///snip

Me too!!!
73

Ed Tanton   N4XY   EMAIL: n4xy@att.net
189 Pioneer Trail
Marietta, GA 30068-3466   TEL: (770)579-3933 V/MBX/FAX

INTERESTS: QRP   BoatAnchors   Test Equipment   Photography
CW: 99.9%   Mercury Paddle # 0214   QRP to 150W: 95%
~~~~~~
"Think you can, think you can't: either way you're right!"   Henry Ford
~~~~~~

Message-Id: <199810140739.AAA27000@mail-gw6.pacbell.net>
From: "Arden Allen" <gumbear@pacbell.net>
To: Old Tube Radios <boatanchors@theporch.com>
Cc: "Old Tube Radios" <boatanchors@theporch.com>
Subject: Re: Postings for the RA6790/GM
Date: Wed, 14 Oct 1998 00:42:19 -0700
MIME-Version: 1.0
Content-Type: text/plain; charset=ISO-8859-1
Content-Transfer-Encoding: 7bit

Uhmmmmmmm........

When I was a bit wetter behind the ears I was playing with CK722 transistors. They were many a 'geek's' of the day (mid to late 50's) intro to the techno-world. Of course I have since given up trying to keep up with something that's beyond this human's capabilities. So I wallow in my boatanchor mud bath and enjoy the relaxation. But, frankly, I enjoy working on anything that's got electrons playing hide-n-seek in it. Many of my solid state goodies date back to the early 60's, certainly qualifying as antiquated. I take pride in keeping my germaniums growing as I do my widdle boddles glowing. The only fence I put around my hog farm is one that keeps out things that don't fit with vintage ham, audio and testing junque. So I think vintage hybrid and solid state radio gear that satisfies the vintage ham radio appetite can coexist with their vacuous forebearers. Yes, keep out those whizzy things with the no-name buttons!

Arden Allen   KB6NAX   Vallejo, CA   gumbear@pacbell.net

Date: Wed, 14 Oct 1998 06:48:11 -0400 (EDT)
From: Sandra L Knepper <slkst29+@pitt.edu>
To: Old Tube Radios <boatanchors@theporch.com>
cc: baswaplist@foothill.net
Subject: Re: FS Hallicrafters SX-100 Receiver
Message-ID: <Pine.GSO.3.96L.981014064629.22587E-100000@unixs4.cis.pitt.edu>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

Nicely restored SX-100 with new cabinet paint. Asking price is $300 shipped. Would prefer pickup if possible. Thank you.

Dave, W3ST
Publisher of the Collins Journal
Homepage: http://www.pixi.com/~jenkins/collins

Date: Wed, 14 Oct 1998 08:07:43 -0400
From: Don <71333.144@compuserve.com>
Subject: Used 866 Tubes
To: Old Tube Radios <boatanchors@theporch.com>
Message-ID: <199810140810_MC2-5CA8-F0E6@compuserve.com>
MIME-Version: 1.0
Content-Transfer-Encoding: 7bit
Content-Type: text/plain; charset=us-ascii
Content-Disposition: inline

I have a small box full of used 866, 866A and Taylor 866 jr rectifiers. Is there any reason on earth to save these things? Anybody want them for shipping?

73, Don

From: w2ec@VNET.IBM.COM
Message-Id: <199810141223.HAA04566@sco.theporch.com>
Date: Wed, 14 Oct 98 08:13:24 EDT
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Old 866's etc

Someone just posted about having excess 866's etc but I deleted the message inadvertantly.

Yes, many people are pulling out their 866's etc to go with 3B28's or even solid state. However, think back a few years when people were tossing out other gear (even that junk military gear) because it no longer had a purpose. Now we pay dearly for some of that gear that was thought to be worthless.

So my take would be never, never dispose of good tubes, regardless of how "environmental unfriendly" they may be. At some point someone is going to want one. If you don't want to keep and care for them yourself, please pass them on to some other BA member who will care for them and make them available when needed.

I myself still use the 866's in my Valiant. They are the original tubes that came with the rig when I bought it brand new, so I still use them for nostalgia sake. Some people have old rigs and keep them to admire, not use. I'm sure they would much rather have an original 866 Jr in the rig than some modern replacement if their purpose is to have an authentic rig.

So please don't dispose of the tubes!

73, Ray W2EC

Message-Id: <3.0.1.32.19981014144138.007c9a20@192.168.0.1>
Date: Wed, 14 Oct 1998 14:41:38 +0200
To: Old Tube Radios <boatanchors@theporch.com>
From: "JOSE V. GAVILA (EB5AGV/EC5AAU)" <eb5agv@ctv.es>
Subject: NEED: Racal RA-63H man/sch
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

Hi gang,

As title says, I'm looking for a Racal RA-63H SSB converter manual and/or schematics. I can offer to swap copies of RA-17, RA-17 Mk-II, RA-17L, RA-117 manuals or just pay for it.

Please, let me know if you can help!.

Thanks and best regards,

JOSE

----

73 EB5AGV / EC5AAU
JOSE V. GAVILA
Ausias March 46, 15
46910 Benetusser - VALENCIA
SPAIN

** VISIT MY VINTAGE RADIO SITE - updated 25-September-1998 ***
http://www.geocities.com/SiliconValley/6992/

Date: Wed, 14 Oct 1998 08:23:18 -0500 (EST)
From: "Roberta J. Barmore" <rbarmore@indy.net>
To: Old Tube Radios <boatanchors@theporch.com>
cc: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: Radio Instrument History Question?
Message-ID: <Pine.SUN.3.96.981014073139.19257A-100000@indy2>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

Hi!

I can't seem to find it, but I *think* a fellow named "Jones" (but not

Frank) wrote up a directional coupler for open-wire lines in QST or CQ after WW II & prior to '52 (know the article exists, unsure of year).

Early RCA TV transmitters had a *lot* of dirtectional couplers made by "M. C. Jones Co." About three times as long as a Bird Thruline section, they used "bullet" WW II type SS diodes. (RCA's own directional couplers/VSWR watchdogs of the same era were alllll tube, two or three of 'em, plus a number of tweaks, about the size of a shoebox! Not too Rube Goldberg, these widgets shut down the rig if the SWR began to climb--you can *burn* the insulators in big coax at VHF and it's real ugly).

Those two items make me wonder if Jones didn't beat Bird to the punch.

But...."standing waves" and "coefficient of reflection" were fairly well-known RF engineering concepts by the mid '30s. It's not too tricky to couple a sample off open wire line with fair (10-20dB) directivity. The use of battery triodes like the '30 as small-signal diodes (in field-strength meters, etc.) was also common. So all the parts & concepts were there. I very much doubt that a thing so close to realization wouldn't have been built, by some EE in pursuit of an advanced degree or an avid experimenter or whatever! There's got to be a thesis sitting on a shelf, or an overlooked item in one of the old mags.

From open-wire line to coax is not much of a step--spin an open-wire line around (infinitely fast) using one wire as the axis and you've got coax, which the math governing impedance of the two types says if you squint at it right (seriously, have a look). So once you've built a directional coupler & rectifier/meter for open-wire, making one for coax is trivial.

...Why no mention in the prewar ham mags? Open-wire line isn't very lossy, especially the 400-600R stuff in common prewar use. (The low-Z case is, especially with typical 1930s flexible insulating materials; one work-around is seen in the Q-sections -- transmission-line transformers! -- made of close-spaced fat copper tubing used to match 50-75R feedpoints to ~500R open-wire line). So SWR wasn't of great concern; if Joe BigHam was after lots of power, he had a fancy antenna, and RF Ammeter(s) and a field-strength meter to make sure the soup was getting to it. Coax was around but uncommon: early on, you rolled your own from copper or brass tubing, wire and bead insulators and later, you could hand over only a little too much cash for some early RG-8-like flexible stuff...but it was about as lossy as twisted lamp cord or the fancier ~70R twisted-pair RF line. SWR counts for more on coax, but few hams knew that at the time (the present concern for it is more a reflection of the need for SS finals to see a non-reactive load than the great utility of the parameter for HF comms). So prewar hams didn't care so much about SWR and weren't much harmed by it; measuring it would've seemed quite arcane.

(Why does SWR count more on coax? Limiting factors for transmission line are voltage and current--flashover distance and I-squared-R losses. Of the two, I^2*R is the most common villan. ~500R line, spacing [there's voltage] is plenty good at a couple of kW and the wire's plenty big enough [that's current]; but as we lower the Z and move to coax, we start running out of surface area for the current. Ideally, all the amps are going up the wire and out--any of 'em that aren't make your losses worse).

A lot of natter, sugar-coated theory (I *like* sugar!) and a bit of history. The OT's *coulda* done it, and somebody probably did. But documenting it will be hunt.

Some folks have been wondering about discussing some SS gear here. I don't favor it--I get *paid* to work on that kind of stuff, it's not my hobby (other than QRP kits, which is more like eating popcorn). 'Druther stick with good old glass tubes for fun!

73,
--Bobbi

KB9GKX "RJ" rbarmore@indy.net   Roberta J. (Bobbi) Barmore
FISTS #3388 * G-QRP #10001 * ARRL * RSGB * WIA
Appreciator Of Vacuum-Tube Ham Gear and Vintage Keys

Message-ID: <21B46CBD022AD1118F0500805F15A068CA22CC@STPMSX05.stp.guidant.com>
From: "Freeberg, Scott (STP)" <scott.freeberg@guidant.com>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: WTB: Transmitter
Date: Wed, 14 Oct 1998 08:43:59 -0500
MIME-Version: 1.0
Content-Type: text/plain

Want to buy the following transmitters:

Micamold XTR-1
Johnson Navigator
Lysco 600

Prefer good physical and operating condition.

73, Scott WA9WFA in Saint Paul Minn

Message-ID: <01BDF757.B000CDA0@mys7.riconnect.com>
From: "Christopher A. Bowne" <radiobwn@riconnect.com>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: 10 Meters Jumping!
Date: Wed, 14 Oct 1998 09:47:37 -0400
MIME-Version: 1.0
Content-Type: text/plain; charset="us-ascii"
Content-Transfer-Encoding: quoted-printable

Lots of AM activity yesterday on 29 Mc AM - worked several western =
states and Alberta, all with 15 watts from an HT-37 into my 40/80 meter =
trap dipole.
See you all on 29.0 Mc! Also heard some EU Am stations. The =
propagation
 is there - all we need is more activity!

73,=20

Chris Bowne, AJ1G
Stonington, CT
radiobwn@riconnect.com
AMI No. 211

Message-Id: <9810141356.AA16233@ct.picker.com>
From: "Ed Santavicca" <santavic@ct.picker.com>
To: Old Tube Radios <boatanchors@theporch.com>
Date: Wed, 14 Oct 1998 09:55:46 -0500
Mime-Version: 1.0
Content-Type: text/plain; charset=US-ASCII
Content-Transfer-Encoding: 7BIT
Subject: Knight T-150/A?

Does anyone know the difference between the Knight T-150 and the T-150A?

73, Ed Santavicca

AA8TV
Lakewood, Ohio

From: Norm Flasch <flasch@cushy.ece.nwu.edu>
Message-Id: <199810141447.JAA05541@cushy.ece.nwu.edu>
Subject: Illinois ARC meet 10/18
To: Old Tube Radios <boatanchors@theporch.com>
Date: Wed, 14 Oct 1998 09:47:22 -0500 (CDT)
MIME-Version: 1.0
Content-Type: text/plain; charset=US-ASCII
Content-Transfer-Encoding: 7bit

The Antique Radio Club of Illinois will be hosting a swap meet
this coming Sunday, October 18. It will be held at the Elgin
Holiday Inn, 345 River Rd. Rt. 31 & I90 starting at 7:00 AM.

--
Norm Flasch flasch@ece.nwu.edu Northwestern University
Electrical and Computer Engineering

Date: Wed, 14 Oct 1998 13:11:36 -0500 (EST)
From: "James F. Wood 253-7886" <WOODJ@mail.firn.edu>
Subject: Need manuel
To: Old Tube Radios <boatanchors@theporch.com>
Message-id: <E1032ZXPLIYPBE*/R=FIRNVX/R=A1/U=WOODJ/@MHS>
MIME-version: 1.0
Content-type: TEXT/PLAIN; CHARSET=US-ASCII
Content-transfer-encoding: 7BIT

NNeed manuals or copies for the following:

Heath grid dip meter GD1B

BK Precision signal marking gen series E-200-c

Bk-Precision model E-200 RF sig gen

Hickok model 610_A Un TV alignment sig gen

Heath Bat. elimi model BE-4

Lambda P/S model W-5152-A

Thanks Jim N4ACS
Woodj@mail.firn.edu

From: JIM_ALLEN@HP-Cupertino-om5.om.hp.com
Date: Wed, 14 Oct 1998 10:45:50 -0700
Message-Id: <H000030e0bf880dd@MHS>
Subject: Raytrack Manual
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Content-Type: text/plain; charset=US-ASCII; name="cc:Mail"
Content-Disposition: inline; filename="cc:Mail"
Content-Transfer-Encoding: 7bit

Still in dire need of a manual (or copy) for a Raytrack DX2000L
linear amp. There must be more that one of these in the world :)
Will pay all charges for copy or good price for an original.

Regards,

Jim

KQ6LB

Message-ID: <3624E517.6FAC@ix.netcom.com>
Date: Wed, 14 Oct 1998 12:53:28 -0500
From: David Stinson <arc5@ix.netcom.com>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Subject: 23D4 Ballast Tubes
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Anyone know where the WW-II era 23D4
ballast tube was used?

73 Dave Stinson AB5S
arc5@ix.netcom.com

Message-ID: <3624DA02.1D5E0451@prtc.net>
Date: Wed, 14 Oct 1998 14:06:11 -0300
From: laffitte@prtc.net (laffitte)
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Cap Tester Needed
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Hi Gang:

I am looking for a good ol capacitor tester even if it needs some work as long as it is complete. I'm getting into a major BA restoration project and would like to get a tester that will test at rated high voltages. Well, I know this is a difficult request but this is the best place for it. Thanks to all!!

Best 73s
Guido KP4FAR
BA Collector in the Tropics
San Juan, PR USA

Date: Wed, 14 Oct 1998 14:30:30 -0400
From: Don <71333.144@compuserve.com>
Subject: 866 Tubes Flashover?
To: Old Tube Radios <boatanchors@theporch.com>

Message-ID: <199810141431_MC2-5CA5-CC84@compuserve.com>
MIME-Version: 1.0
Content-Transfer-Encoding: 7bit
Content-Type: text/plain; charset=us-ascii
Content-Disposition: inline

I don't get it...I posted those 866 tubes here for shipping and got a hundred replies. But don't these used tubes carry some risk with them? Or is flashover less of a hazard to power supplies than I have previously thought? Wouldn't 3B28's be a better choice to protect aging BAs? What am I missing?

73, Don

From: w2ec@VNET.IBM.COM
Message-Id: <199810141850.NAA18107@sco.theporch.com>
Date: Wed, 14 Oct 98 14:40:58 EDT
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Forced air cooling of tubes

I have a 2 meter vhf amp I homebrewed 25-30 years ago. Uses a 4CX250B. Way back then, I used a squirrel cage blower into the sealed chassis so the air only had one outlet, up thru the base of the tube, thru the fins and out the top. I had built a speed control to set the blower speed for the proper cfm setting, used some fancy instrument from the lab to measure it. Not in that lab anymore and no access to the test instruments, but anyway, a few weeks ago the speed control failed and now the blower runs full speed all the time. Any engineers out there tell me if a dramtic increase in the airflow would have any effect on the tube cooling characteristics. I'm gonna fix the speed control but just curious as the air flow is significantly greater, at least as measured by a damp finger held in the air above the tube :-) If increased noise from the blower was any indicator, it's running 100 times faster than it used to!

73, Ray W2EC

Message-ID: <36251755.4937@mr.net>
Date: Wed, 14 Oct 1998 14:27:49 -0700
From: "ROBERT F. KEMP" <rkemp@mr.net>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Subject: f/s SBE-34
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Anyone interseted in my little SBE-34? $125.00 shipped.

Bob.

Message-ID: <362507C1.97CAA4A7@pixi.com>
Date: Wed, 14 Oct 1998 10:21:22 -1000
From: rcote <rcote@pixi.com>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Nixie tubes
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Found the following Nixie tubes for yourold counters and time ocode readers. Priced at............ $5 ea shipped?

B5025	1ea	BURROUGHS	NIXIE
8422	2ea	NATIONAL	NIXIE
8037/B5031	1ea	BURROUGHS	NIXIE
7009	1ea	RICHARDSON	NIXIE, top small
NL7009	1ea	RICHARDSON	NIXIE, top, 11-PIN
6844	5ea	NATIONAL	NIXIE-NUMBERS
5441 A	1ea	NATIONAL	NIXIE-NUMERAL

--

Raymond Cote
1405 Dominis ST #105
Honolulu, HI 96822-3213

Message-ID: <3625090C.69407548@pixi.com>
Date: Wed, 14 Oct 1998 10:26:52 -1000
From: rcote <rcote@pixi.com>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Nuvistors
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Following are Antique Electronics Supply prices. My price is 50% off list. Shipping included in prices.

8627	9ea	RCA, GTE	NUVISTOR	$24
8058	9ea	GTE	NUVISTOR	$38
6CW4	4ea	GTE	NUVISTORk	$12.50
7586	27ea	PHILIPS	NUVISTOR	$30
7587	26ea	RCA,GTE	NUVISTOR	$35
8393	10ea	RCA	NUVISTOR	$13

--

Raymond Cote
1405 Dominis ST #105
Honolulu, HI 96822-3213

From: "Steve Hill" <SHILL@onaustralia.com.au>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: 866 Tubes Flashover?
Date: Thu, 15 Oct 1998 06:37:58 +1000
MIME-Version: 1.0
Content-Type: text/plain; charset=ISO-8859-1
Content-Transfer-Encoding: 7bit
Message-Id: <20370872187334@domain2.bigpond.com>

> I don't get it...I posted those 866 tubes here for shipping and got a
> hundred replies. But don't these used tubes carry some risk with them? Or
> is flashover less of a hazard to power supplies than I have previously
> thought? Wouldn't 3B28's be a better choice to protect aging BAs? What am
> I
> missing?
>
> 73, Don

866s have a bad reputation that is not justified.

Yes, 3B28 are a better tube.

Yes, if you are not careful in using 866s they can flash over.
But if you use a bit of care they will work fine.
We use 6 of the critters in our main transmitter at the Queensland
Maritime Museum, and have never had any problems.
The key is to let the things warm up properly. We run the heaters
for at least half an hour before using the transmitter.
This allows the mercury cloud to adequately reform which has condensed
to a degree over the couple of days with no use. When using a tube that
has not been used for some time its heater must be run for some hours to
form the mercury field. That is why the transmitter has a socket for a
spare
tube which just runs the heaters to maintain the mercury field.

The point is, if you only run your rig for 5 minutes before transmitting,
of course
you will get trouble.

Cheers

Steve Hill   VK4CZT
<SHILL@onaustralia.com.au>

visit my military radio page
<http://www.users.bigpond.com/SHILL>
39 Banbury St
Carina. 4152.
Brisbane. Queensland. Australia.

Date: Wed, 14 Oct 1998 17:09:48 -0400 (EDT)
From: William Donzelli <william@ans.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: 866 Tubes Flashover?
Message-Id: <Pine.GSO.3.96.981014170916.16427A-100000@titan.purch.ans.net>
Mime-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

> I don't get it...I posted those 866 tubes here for shipping and got a
> hundred replies. But don't these used tubes carry some risk with them? Or
> is flashover less of a hazard to power supplies than I have previously
> thought? Wouldn't 3B28's be a better choice to protect aging BAs? What am I
> missing?

The cool blue glow.

William Donzelli
william@ans.net

Date: Wed, 14 Oct 1998 16:16:18 -0500 (EST)
From: "Roberta J. Barmore" <rbarmore@indy.net>
To: Old Tube Radios <boatanchors@theporch.com>
cc: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: 866 Tubes Flashover?
Message-ID: <Pine.SUN.3.96.981014160759.15370A-100000@indy2>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

Hi!

In small-market AM/BC service, a mere 20 years ago (but the transmitter was from 1947!), we ran the heaters 24/7; the station was only on from sunrise to sundown but it was worth the slight cost. We never lost an 866 in service.

At another little AM "daytimer," the ops would *always* give the AM rig (with 866s, the rig being a Collins 20V1) an hour warm-up. That worked well, too. (Seems I remember the Chief having to replace at least one in a my couple of years there).

You have to treat 'em nice. Don't crash 'em on, don't push the operating limits. It's a luxury not all ham stations have.

73,
--Bobbi

KB9GKX "RJ" rbarmore@indy.net   Roberta J. (Bobbi) Barmore
FISTS #3388 * G-QRP #10001 * ARRL * RSGB * WIA
Appreciator Of Vacuum-Tube Ham Gear and Vintage Keys

Message-Id: <3.0.5.32.19981014174709.009d3b00@postoffice.worldnet.att.net>
Date: Wed, 14 Oct 1998 17:47:09 -0400
To: Old Tube Radios <boatanchors@theporch.com>
From: Ed Tanton <n4xy@att.net>
Subject: Re: 866 Tubes Flashover?
Cc: Old Tube Radios <boatanchors@theporch.com>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

One thing can be said for turning on your 866s too quickly: they really blow up nicely. I had a Hallicrafters HT-9 back in... well, a good while back (1962). I liked to get up in the mornings and work a few before school. Hit that switch a bit too early one day, and BOOM!!! Took out one of the transformers, and scared the living daylights out of me and everybody else in the house. Really impressive flash-bang!!!
73

```
__________________________________________________________
Ed Tanton   N4XY                             EMAIL: n4xy@att.net
189 Pioneer Trail
Marietta, GA  30068-3466           TEL: (770)579-3933 V/MBX/FAX
__________________________________________________________
INTERESTS:   QRP     BoatAnchors   Test Equipment     Photography
CW: 99.9%             Mercury Paddle # 0214          QRP to 150W: 95%
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
"Think you can, think you can't: either way you're right!"      Henry Ford
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
```

From: PLT1032@aol.com
Message-ID: <5cfe2eb2.36253fd3@aol.com>
Date: Wed, 14 Oct 1998 20:20:35 EDT
To: Old Tube Radios <boatanchors@theporch.com>
Mime-Version: 1.0
Subject: RECEIVER R-22 INFO. NEEDED
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7bit

Can anyone supply me with tuning capacitor lead hookup information and/or

diagrams for the R-22 Command Receiver, 540 K.C. - 1600 K.C.
Any help would be appreciated!

Bob Lindgren

Message-Id: <3.0.1.32.19981014172924.0088b7b0@marlin.nosc.mil>
Date: Wed, 14 Oct 1998 17:29:24 -0700
To: Old Tube Radios <boatanchors@theporch.com>
From: Edward Zeranski <ejz@nosc.mil>
Subject: Gonset Osc/Monitor
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

Gonset Folks,

Recently picked up a little Gonset code osc/CW-Phone monitor. Its hammertone grey w/red knobs and uses 50C5 & 35W4. Fixed it but wondered if any Gonset Folk know when it was on the market. Thank You.

Ed Zeranski This is a private opinion or statement.
home email: ezeran@cris.com

Message-Id: <199810150324.UAA00980@mail-gw6.pacbell.net>
From: "Arden Allen" <gumbear@pacbell.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: 866 Tubes Flashover?
Date: Wed, 14 Oct 1998 20:26:33 -0700
MIME-Version: 1.0
Content-Type: text/plain; charset=ISO-8859-1
Content-Transfer-Encoding: 7bit

Hi Don 'n' y'all;

> ....But don't these used tubes carry some risk with them? Or
> is flashover less of a hazard to power supplies than I have previously
> thought? ....

It's already been explained......sorta. Mercury is a metal. It makes a good conductor therefore. At room temperature it is a liquid, just like solder is a liquid at +400 deg. F. When an 866 has been sitting around at room temp ALL of the mercury is in liquid form. The only gas present is some argon, I think, which makes it work better for some reason. So why do they go bang when plate voltage is applied before the mercury has been evaporated into a metal vapor? A physicist could give us a precise answer and since I'm not one I'm just guessing. If the mercury vapor is present the tube has an appropriately low plate resistance. That's why mercury vapor rectifiers are, 'cause there is less plate voltage drop and less power is wasted in heat. So if you apply plate voltage too early lots of heat is generated because of the high plate resistance and the liquid mercury starts "sputtering" , sorta like throwing a few drops of water in a hot frying pan. With metallic mercury flying around in the tube it doesn't take much to imagine an ultra low breakdown voltage condition occuring causing an arc. An arc is a path of high conductivity through the gas, vapor and whatever is going on at the atomic level which produces a "plasma". The plasma conducts in both directions and now you have a short circuit across your high voltage transformer. Poof! You missed another sked.

Arden Allen   KB6NAX   Vallejo, CA   gumbear@pacbell.net

Message-Id: <199810150632.XAA31992@gruumsh.irv.ca.us>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: B-17, B-24
Date: Wed, 14 Oct 1998 23:32:33 -0600
From: "Mark J. Blair" <mblair@gruumsh.irv.ca.us>

Bill Riches <briches@bellatlantic.net> wrote:

> Greetings - the last B-24 "All American" fully restored, flying B-24 and
> one of the 12 Flying B-27G "Nine-O-Nine" are coming to Millville, NJ
> Airport Friday Oct 16 thru Sunday Oct 18. Flights are available for
> $300. Phone 1-978-568-8924 for info. Wow! to be able to take a ride in
> the last B-24.

I took a flight in the Nine-O-Nine a year or two ago when they were in my neck of the woods. Very highly recommended!! At the time, they didn't have the original radios operational and had no interest in making them work, but at least they didn't tear them out like many of the other B-17 exhibitors.

--
Mark J. Blair, KE6MYK <mblair@gruumsh.irv.ca.us>
PGP public key available from http://pgp.ai.mit.edu/
DO NOT SEND ANY UNSOLICITED COMMERCIAL EMAIL TO THIS SITE

End of BOATANCHORS Digest 2258
****

>From ???@??? Fri Oct 16 05:23:49 1998
Message-Id: <199810151825.NAA03701@sco.theporch.com>
Date: Thu, 15 Oct 1998 13:25:24 CDT
Subject: BOATANCHORS digest 2259

BOATANCHORS Digest 2259

Topics covered in this issue include:

1) Collins 75A-1
by Jean Paul Taillebois <jpt1@idirect.com>
2) The B17 is in Austin...
by Mike Flicinski <k2uxe@ibm.net>
3) Re: Forced air cooling of tubes
by w2ec@VNET.IBM.COM
4) Re: Forced air cooling of tubes
by "A. B. Bonds" <ab@vuse.vanderbilt.edu>
5) Re: Forced air cooling of tubes
by Billy Wiggins <bwigg@worldnet.att.net>
6) PS for R392
by Gary Pewitt <gpewitt@execpc.com>
7) Re: Forced air cooling of tubes
by "P. J. Rovero" <provero@connix.com>
8) Re: Forced air cooling of tubes
by "Roberta J. Barmore" <rbarmore@indy.net>
9) SP600 question / problem
by "Schroeder, Russell G" <Russell.Schroeder@usa.xerox.com>
10) Re: SP600 question / problem

by Bill Jarvis <maestro@cix.co.uk>
11) RE: Forced air cooling of tubes
by "Katz, Gene S" <gene.s.katz@lmco.com>
12) Re: Forced air cooling of tubes
by "Paul Christensen" <paulc@mediaone.net>
13) Re: Forced air cooling of tubes
by "Paul Christensen" <paulc@mediaone.net>
14) Re: Forced air cooling of tubes
by Bill Hawkins <bill@iaxs.net>
15) Re: Forced air cooling of tubes

by Bill Jarvis <maestro@cix.co.uk>
16) Re: SP600 question / problem
by Al Klase <skywaves@bw.webex.net>
17) FS: Tek 453 and 454A
by Charles Knaack <knaack@wsu.edu>
18) German U505 Sub. Radio Room
by Andre Guibert <aguibert@sympatico.ca>

19) PRC 10 - Set flame enable
by jmccarty@lucent.com (John J Mccarty)

Message-Id: <3.0.6.16.19981015074338.20971ef0@idirect.com>
Date: Thu, 15 Oct 1998 07:43:38
To: Old Tube Radios <boatanchors@theporch.com>
From: Jean Paul Taillebois <jpt1@idirect.com>
Subject: Collins 75A-1
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

Hi,
I acquired a Collins 75A-1 cosmetically very clean. A mod was made and i was woundering if anyone knows if this was a standard or just a home brew.
RF 6ak5 replaced by a 6eh7
6sa7 replaced by 12at7
6h6 replaced by 6sn7.
The radio is not working well and of course i will bring it back to it's original circuitry.

73

Jean Paul VE3JPT

Message-ID: <3625F5AE.757@ibm.net>
Date: Thu, 15 Oct 1998 06:16:30 -0700
From: Mike Flicinski <k2uxe@ibm.net>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Subject: The B17 is in Austin...
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

I was working on my wire antennas in the back yard on Monday afternoon when I heard the sound of heavy radial engines. Living on the north side of Austin we are on the incoming flight path into Robert Mueller airport here.

Looking to my West I caught the unmistakeable tail profile of a B17 heading south to the airport for its visit here this week.

I've seen the radio installations in that one and as others have said, it's a static display but they *are* there. I recall a BC348 and a few Command Sets without cables or controls. Dave Stinson? you should pay them a visit with a few parts!

It's not often and not too much longer that we'll be able to experience
a flyover much less a fly-IN these warbirds to which we owe our way
of life!

73 all,

Mike K2UXE
Round Rock, TX

From: w2ec@VNET.IBM.COM
Message-Id: <199810151428.JAA24900@sco.theporch.com>
Date: Thu, 15 Oct 98 10:19:15 EDT
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: Forced air cooling of tubes

I've received several comments that basically there is no such thing as too much air, so blower noise is the only factor.

As to why I asked the question, and now we get into water cooled tubes, is that on another list (unrelated, it's about british sports cars), there were questions about the heat transfer of coolant flowing too rapidly through a radiator, not allowing sufficient time for the heat from the coolant to transfer out through the fins of the radiator. I was curious if a similar situation might occur on finned tubes using either air or water.

73, Ray W2EC

Message-Id: <3.0.1.32.19981015100559.00922a00@vuse.vanderbilt.edu>
Date: Thu, 15 Oct 1998 10:05:59 -0500
To: Old Tube Radios <boatanchors@theporch.com>
From: "A. B. Bonds" <ab@vuse.vanderbilt.edu>
Subject: Re: Forced air cooling of tubes
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

At 10:19 AM 10/15/98 EDT, you wrote:
>I've received several comments that basically there is no such thing as too
>much air, so blower noise is the only factor.
>
>As to why I asked the question, and now we get into water cooled tubes, is
>that on another list (unrelated, it's about british sports cars), there were
>questions about the heat transfer of coolant flowing too rapidly through a
>radiator, not allowing sufficient time for the heat from the coolant to
>transfer out through the fins of the radiator. I was curious if a similar
>situation might occur on finned tubes using either air or water.

>

On a number of occasions this urban myth has been beaten down, but apparently it is still alive. The primary factor in transferring heat is the temperature differential. The maximum rate of transfer occurs when the cooling water first arrives at the hot spot. The longer it hangs around, the less the rate of energy transfer.

I believe that people got into this because there was a perception that removal of a thermostat did not help to keep the engine cool. If you have to remove the thermostat, there is something else wrong with your cooling system.

Sorry, Jack, further the deponent saith not.

A. B. Bonds

```
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"
To: Old Tube Radios <boatanchors@theporch.com>
From: Billy Wiggins <bwigg@worldnet.att.net>
Subject: Re: Forced air cooling of tubes
Message-Id: <19981015153739.EJHS27050@BWIGG>
Date: Thu, 15 Oct 1998 15:37:39 +0000
```

> As to why I asked the question, and now we get into water cooled tubes, is
> that on another list (unrelated, it's about british sports cars), there were
> questions about the heat transfer of coolant flowing too rapidly through a
> radiator, not allowing sufficient time for the heat from the coolant to
> transfer out through the fins of the radiator. I was curious if a similar
> situation might occur on finned tubes using either air or water.

In our race cars we remove the center of the thermostat only to restrict the water flow some. The theroy behind this was that the water flowed so fast that it did not absorb the heat. Seemed to worked. Air I think would be a different ballgame. The more air we put across the radiators the cooler things get. Looks like we need one of our physics experts for a good answer to this one.

Billy

```
Date: Thu, 15 Oct 1998 10:46:05 -0500 (CDT)
From: Gary Pewitt <gpewitt@execpc.com>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: PS for R392
Message-ID: <Pine.GSO.3.95.981015103959.12496A-100000@earth>
MIME-Version: 1.0
```

Content-Type: TEXT/PLAIN; charset=US-ASCII

My friend Ron Doering just got a nice R392 and needs a power supply
for it. He is in Japan so it's a little hard for him to find one.
I tried Fair Radio and they no longer have anything suitable.
So if anyone has a 24 to 28 volt 3 amp or larger supply it would
be welcome. Ron's call is WA9QNN and his new Japanese call is
7J1BAN.   His e-mail address is rdoering@hotmail.com.
His mailing address is:
Ron Doering
Psc 477 Box 39
FPO AP 96306

Thanks for any assistance   73 Gary   gpewitt@execpc.com

gpewitt@execpc.com N9ZSV   414 355 8147
Gary Pewitt 6120 W. Calumet Rd. Apt 204
Milwaukee, WI 53223.   Boatanchor buff
Sturgeon's Law: 90% of Everything is crap.

Date: Thu, 15 Oct 1998 12:05:11 -0400 (EDT)
From: "P. J. Rovero" <provero@connix.com>
To: Old Tube Radios <boatanchors@theporch.com>
cc: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: Forced air cooling of tubes
Message-ID: <Pine.BSI.3.95.981015114617.5004A-100000@comet.connix.com>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

Navy steam plant training and experience (lots of it bad)
to the rescue....

The admonition that you can't have too much cooling air
is good up to the point where you try to move air TOO
fast -- it can actually heat things up.

With fluids in the liquid state, you have to be even
more careful. As flow velocities increase you have
the danger of cavitation. Heat transfer into the
now bubbly liquid will be LESS than the normal fluid.
And cavitation can pit/erode/destroy your piping
system and lead to leaks and complete cooling system
failure.

The key with any critical cooling system is to measure
temperature of the cooling fluid (gas or liquid) before

it hits whatever is being cooled and after it exits, along
with any critical temp of the actual object being cooled.

A lot of aircraft electronics (old days) was in sealed
cases but used fans to move lots of air around inside
the sealed case. (ARC-51, ARC-52, etc). Guess they
figured it would be cold outside the case, at least at
altitude, giving enough delta-T to move heat. Fans just
equalized temp inside the case, preventing cooking of
key areas/components.

Can't really think of any radio electronics that actually
monitored temps, but our air search radar used and monitored
chilled water temps.

My old '65 VW bus was fully kitted, oil temps before AND
after the external coolers (valves to select one, two, or
none in the "cockpit"), cylinder temps on all four cylinders,
and (coup de grace) exhaust gas temp gauge.

Mandatory BA content: When I turn more than 3 BA's on
in the shack, the room gets comfortably warm, even in
New England winters.

P. J. "Josh" Rovero   email: provero@connix.com
Oceanographer   work: rovero@sonalysts.com
Meteorologist   radio: KK1D
Curmudgeon at Large   web: http://www.connix.com/~provero/

Date: Thu, 15 Oct 1998 11:37:12 -0500 (EST)
From: "Roberta J. Barmore" <rbarmore@indy.net>
To: Old Tube Radios <boatanchors@theporch.com>
cc: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: Forced air cooling of tubes
Message-ID: <Pine.SUN.3.96.981015110103.28557A-100000@indy3>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

Hi!

Well, I'm no physicist; what I know about thermodynamics, I learned in the kitchen! (1. heat goes from the fire to the pan; 2. If you take the pan off the fire, it cools down; 3. No matter how hot the kitchen gets, the average temperature of the house stays the same. Or something like that). But I'll give this subject a try.

When we blow air through a finned external anode, as in a 4CX250, we are mostly cooling off the structure where the heat is produced. All we have to do is take the heat away, by removing the air as it is heated. Within a practical upper limit, any removal of the air faster than the critical lowest rate is gravy. The heat still gets took away. We trust the designer to have provided enough surface area intercepting the air to get decent transfer with a practical amount of air, and we trust ourselves not to provide so much air that it blows the tube yelping out of the socket.

A car radiator (and I own an MGB; I can just picture the little oil cooler that sits in front) is a little different. We have heated the water (or whatever), and now we pipe it out to a structure to pass that heat on to the air. The *inside* of the radiator, where the liquid flows, is not especially finned; instead, we divide the liquid up into a bunch of little tubes, and try for the best surface contact. A cylinder is a crummy thing in terms of surface area vs. enclosed volume (we'd like to have lots of area for small volume). Liquids (some; oil and water for sure) are better conductors of heat than air, so we can get away with it...but you can find an upper limit in terms of how much liquid/how fast (and in a definite volume, "how much" and "how fast" are different faces of the same thing). However, it's not a very hard limit, nor is a car radiator that close to it. I had an MG 'stat fail closed one morning on the way to work (you have to love a car with real meters on the dash!) and had to take it out. Car didn't freeze or even run funny. Took a lot longer to warm up, though!

You can't cool a thing any lower than the ambient temperature by simple radiators alone; and theory says, you can't even *reach* the ambient so long as you're pumping heat into the system (that'd take perfect conduction, which I pretty sure that cast iron, water + glycol, thin copper tubes & fins and air aren't). (We do air-conditioning by cheating tricks with the expansion of compressed gas; a drastic oversimplification that will cause a horde of chiding HVAC techs to descend--I hope; I'd love to learn more on the topic!)

The only "gotchas" I can see in "overcooling" are flukey effects caused by creating too much temperature differential at the source of the heat--and given good design, these are unlikely, as the hottest parts are *built* to provide the best heat-transfer to the cooling medium.

YMMV, especially in a race car. Like many a ham linear, such critters tend to be optimistic about component ratings, or at least push 'em real hard, and it's generally wise to follow practices learned the hard way by those who went before, while "reality-checking" 'em when possible. Among other things, there's got to be an optimal running temp vs. horsepower, which we don't care so much about when all we have to do is get to work, but can make a very big difference if you want to win a race! (But if you can overcool *that* much, you've got too much radiator. Rip it out, weight counts! <grin>)

...And I think this does apply to BAs. Water-cooled versions of the more famous ceramic transmitting tubes exist, and sometimes show up on the surplus market at decent prices. If you've a notion about the process, it makes cooling 'em a little more understandable. Heat transfer in general is a vital topic to tube work, especially anything more than the piffling few Watts I run at home; and sometimes even at low power, if a person wants to run a stable ECO!

73,
--Bobbi

KB9GKX "RJ" rbarmore@indy.net Roberta J. (Bobbi) Barmore
FISTS #3388 * G-QRP #10001 * ARRL * RSGB * WIA
Appreciator Of Vacuum-Tube Ham Gear and Vintage Keys

```
Content-return: allowed
Date: Thu, 15 Oct 1998 11:22:27 -0400
From: "Schroeder, Russell G" <Russell.Schroeder@usa.xerox.com>
Subject: SP600 question / problem
To: Old Tube Radios <boatanchors@theporch.com>
Cc: "Schroeder, Russell G" <Russell.Schroeder@usa.xerox.com>
Message-id: <9F978D0493DBD1119C2D00805FC736152DA7F1@usa0207ms1.eng.mc.xerox.com>
MIME-version: 1.0
Content-type: text/plain
```

Hollowstaters,

The ongoing discussion of the "silky tuning" of the SP600 forces me to ask a question of this all-knowing group. I recently acquired an SP-600-JX14 and it has a minor problem. I am experiencing slippage between the idler and the edge of the dial. The idler is located between the main tuning shaft and the dial. Everything appears to be free turning, well lubricated. Cannot identify anything binding when the slippage occurs. The receiver has been updated with new caps and is functioning very well. Haven't been able to obtain a copy of the manual yet, which may have some information relating to this problem. Any help / suggestions appreciated. Thanks.

73 Russ W2DYY

Russell.Schroeder@usa.xerox.com

```
Message-Id: <199810151653.RAA25145@mail.compulink.co.uk>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
From: Bill Jarvis <maestro@cix.co.uk>
CC: <boatanchors@theporch.com>
```

Date: Thu, 15 Oct 1998 17:49:19 +500
Subject: Re: SP600 question / problem

On 1998-10-15 Russell.Schroeder@usa.xerox.com said:
 Ru   Cc: "Schroeder, Russell G" <Russell.Schroeder@usa.xerox.com>
 Ru   Hollowstaters,
 Ru   The ongoing discussion of the "silky tuning" of the SP600 forces me
 Ru   to ask a question of this all-knowing group. I recently acquired
 Ru   an SP-600-JX14 and it has a minor problem. I am experiencing
 Ru   slippage between the idler and the edge of the dial. The idler is
 Ru   located between the main tuning shaft and the dial. Everything
 Ru   appears to be free turning, well lubricated. Cannot identify
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 Ru   updated with new caps and is functioning very well. Haven't been
 Ru   able to obtain a copy of the manual yet, which may have some
 Ru   information relating to this problem. Any help / suggestions
 Ru   appreciated. Thanks. 73 Russ W2DYY
 Ru   Russell.Schroeder@usa.xerox.com

You could risk applying VERY small dabs of Friar's Balsam; it makes things slightly stickier, for a long time, and can be removed with alcohol.

============   =====   =====   BILL J.   =====   =====   ============
GM8APX, qthr   Edinburgh, Scotland, UK

Sit simplex, stulte

Net-Tamer V 1.12 Beta - Registered

Content-return: allowed
Date: Thu, 15 Oct 1998 13:01:10 -0400
From: "Katz, Gene S" <gene.s.katz@lmco.com>
Subject: RE: Forced air cooling of tubes
To: Old Tube Radios <boatanchors@theporch.com>
Cc: Old Tube Radios <boatanchors@theporch.com>
Message-id: <D977A62BE8F4D111B31E0000F8081AD0AEFA65@emss04m16.ems.lmco.com>
MIME-version: 1.0
Content-type: text/plain

Thank goodness for a breath of fresh intelligence on this net! Bobbi's messages are really great, well written, and a credit to the depth of experience available to us. How refreshing not to read ARRL hanbook $5 or WTB SX-111 knob. Keep 'em flying, Bobbi. 73 de Gene KC6BLD
Gene S. Katz
Senior Member Engineering Staff

Lockheed Martin Government Electronic Systems
Bldg 108-136, PO Box 1027
199 Borton Landing Road
Moorestown, NJ 08057-0927

(609)722-3035 ph
(609)722-2310 fax
gene.s.katz@lmco.com

Message-ID: <00ad01bdf85d$abd5bb80$35a898a9@jaxadmin2-89.mediaone.com>
From: "Paul Christensen" <paulc@mediaone.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: Forced air cooling of tubes
Date: Thu, 15 Oct 1998 13:02:31 -0400
MIME-Version: 1.0
Content-Type: text/plain;
    charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

As the owner of a ca. 1970 ETO/Alpha PA-70V vapor-cooled amp, I found an excellent article that compares the heat transfer efficiencies between forced air, water, and vapor cooling techniques in the April, 1966 issue of QST. It is entitled "The Stanley Steamer," and is authored by Jack Quinn, a former engineer with Eimac/Varian. This is required reading by anyone contemplating the use of an alternative cooling method in place of forced-air cooling.

A good interactive source of information, is the AMPS mail reflector group.

-Paul, W9AC

-----Original Message-----
From: w2ec@VNET.IBM.COM <w2ec@VNET.IBM.COM>
To: Old Tube Radios <boatanchors@theporch.com>
Date: Thursday, October 15, 1998 10:35 AM
Subject: Re: Forced air cooling of tubes

>I've received several comments that basically there is no such thing as too
>much air, so blower noise is the only factor.
>
>As to why I asked the question, and now we get into water cooled tubes, is
>that on another list (unrelated, it's about british sports cars), there
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>questions about the heat transfer of coolant flowing too rapidly through a
>radiator, not allowing sufficient time for the heat from the coolant to
>transfer out through the fins of the radiator. I was curious if a similar

>situation might occur on finned tubes using either air or water.
>
>
>73, Ray W2EC
>
>

Message-ID: <010601bdf860$8b551600$35a898a9@jaxadmin2-89.mediaone.com>
From: "Paul Christensen" <paulc@mediaone.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: Forced air cooling of tubes
Date: Thu, 15 Oct 1998 13:23:06 -0400
MIME-Version: 1.0
Content-Type: text/plain;
     charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

I should have pointed out that the most efficient cooling methods I previously mentioned, ranked in order are as follows:

1) Vapor-Phase (steam)
2) Water
3) Forced Air

As I recall, one calorie is equal to the amount of energy needed to raise the temperature of 1 gram of water by 1-degree-celsius. In Vapor-Phase cooling this equates to approximately 540 calories per degree-celsius.

Somewhere on this continuum is conduction cooling which is a function of several factors including the thermisty-rating and geometries of the conductor. In practice, we oftentimes see anodized aluminum used as heat sinks instead of bare aluminum; the reason being that the thermisity is greatly imroved as a result of the anodizing process.

-Paul, W9AC

>As the owner of a ca. 1970 ETO/Alpha PA-70V vapor-cooled amp, I found an
>excellent article that compares the heat transfer efficiencies between
>forced air, water, and vapor cooling techniques in the April, 1966 issue of
>QST. It is entitled "The Stanley Steamer," and is authored by Jack Quinn,
a
>former engineer with Eimac/Varian. This is required reading by anyone
>contemplating the use of an alternative cooling method in place of
>forced-air cooling.
>
>A good interactive source of information, is the AMPS mail reflector group.

>
>-Paul, W9AC
>
>-----Original Message-----
>From: w2ec@VNET.IBM.COM <w2ec@VNET.IBM.COM>
>To: Old Tube Radios <boatanchors@theporch.com>
>Date: Thursday, October 15, 1998 10:35 AM
>Subject: Re: Forced air cooling of tubes
>
>
>>I've received several comments that basically there is no such thing as
too
>>much air, so blower noise is the only factor.
>>
>>As to why I asked the question, and now we get into water cooled tubes, is
>>that on another list (unrelated, it's about british sports cars), there
>were
>>questions about the heat transfer of coolant flowing too rapidly through a
>>radiator, not allowing sufficient time for the heat from the coolant to
>>transfer out through the fins of the radiator. I was curious if a similar
>>situation might occur on finned tubes using either air or water.
>>
>>
>>73, Ray W2EC
>>
>>
>

Date: Thu, 15 Oct 1998 12:26:59 -0500 (CDT)
From: Bill Hawkins <bill@iaxs.net>
Message-Id: <199810151726.MAA19593@citrus.iaxs.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: Forced air cooling of tubes

Ah, looks like we have a hot topic. :-)

There's two pertinent things about heat. The quantity of heat is measured by the temperature rise of a mass of material. More mass, less rise for the same heat. The flow of heat is just like Ohm's law, with resistance called the heat transfer coefficient. Current is heat, and voltage is temperature. Think of mass as capacitance, and you have a simple model for cooling as an RC circuit.

The heat transfer coefficient is tricky, though. PhD mechanical engineers can specialize in that one field (no, not me). Water flow rate affects heat transfer, as Josh said. And phase change (boiling) really complicates the equations. But air doesn't have those problems (cavitation, boiling). Moving more air means more mass to soak up the heat. But you have to have adequate heat transfer area and transfer coefficient in order for more air to be effective. Actually, R in the RC model is area times coefficient.

If you have ideal conditions with air blowing into a heated tube, the more air, the closer the outlet air temp gets to ambient. The only way you could get too much air is to have the air velocity exceed the speed of sound. Shock formation generates heat.

There oughtta be enough errors in that to bring at least one correction ...

Regards,
Bill Hawkins

Message-Id: <199810151759.SAA09924@mail.compulink.co.uk>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
From: Bill Jarvis <maestro@cix.co.uk>
CC: <boatanchors@theporch.com>
Date: Thu, 15 Oct 1998 18:55:15 +500
Subject: Re: Forced air cooling of tubes

In 1955 when we were between 1 and 2 years from what used to be called "A-level", we had a booklet about "thvolts, thamps and thohms".

Thamps were identical with watts (a rate of flow of heat).

Thvolts were temperature differences in kelvin (or Celsius).

Thohms could be added, for heat conductors in series (a copper cylinder of low thohms, and a jacket of high thohms); or for heat conductors in parallel (a wall and a window) you had to add the thamps, or 1/thohms.

It made calculations on house walls incredibly easy. I suspect it did not catch on because everyone got the giggles.

============   =====   =====   BILL J.   =====   =====   ============
GM8APX, qthr   Edinburgh, Scotland, UK

Hodie adsit, cras absit

Net-Tamer V 1.12 Beta - Registered

Message-ID: <36263A34.66AB9484@bw.webex.net>
Date: Thu, 15 Oct 1998 14:08:52 -0400
From: Al Klase <skywaves@bw.webex.net>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
CC: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: SP600 question / problem
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Bill,

Could you help us with an American translation of Friar's Balsam? We have a gooey liquid called Canadian Balsam we use to mount microscope slides.

Al

Bill Jarvis wrote:

> You could risk applying VERY small dabs of Friar's Balsam; it makes
> things slightly stickier, for a long time, and can be removed with
> alcohol.
>

--
Al Klase - N3FRQ
skywaves@bw.webex.net
Flemington, NJ 08822
Web Page: http://www.webex.net/~skywaves/home.htm

Message-Id: <l03020900b24bf6c101c5@[134.121.47.16]>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"
Date: Thu, 15 Oct 1998 11:17:05 -0800
To: Old Tube Radios <boatanchors@theporch.com>
From: Charles Knaack <knaack@wsu.edu>
Subject: FS: Tek 453 and 454A

Greetings Anchorites,

I'm trying to clear some of my basement and need to surplus some extra O'scopes. I offered these earlier this year, but the trades fell through and I then became embroiled in the "remodel from hell" and unable to think about BAs.

What I have is an very clean, ex USAF model 453 Mod 730K. It's a

50 Mhz portable, dual trace, delayed sweep, with nuvister input. The trace is good, with no apparent bad spots in the CRT, and both channels are working. As far as I can tell Mod 730K moved the calibrator and some of the aux inputs and outputs from the front right side of the case to the front panel. It may have also increased the Mhz spec as there is a factory spec testing sheet (for another SN 'scope) that lists a spec for 3 dB rolloff at 60 Mhz. I also have a manual for a civillian 453 that I'll include in the deal. I also have a 454A (without manual). The standard 454 is the same as the 453, but w/ 150 Mhz vertical bandpass. I'm not sure what refinments the "A" suffix brought.

These are nifty pieces of BA test equip. They won't heat your basement like a 551, but then you can pick them up with one hand and they won't take up your entire bench. I'd like to get something like $100 + shipping for either, but am open to offers.

Speaking of heating your basement, I also have a 551 and a 556 that I would part with really cheaply (read free), but I won't ship them (I will, however, carry them to your car). I'll wait a few days for the digest people to catch up, and in the case of multiple cash bids, my 3 yr old will draw from a hat.

Charles

****
Charles Knaack - ICP/MS and Stable Isotope analysis
Geology Dept. Washington State University
knaack@wsu.edu
****

Date: Thu, 15 Oct 1998 14:21:40 -0400 (EDT)
Message-Id: <199810151821.OAA15945@smtp13.bellglobal.com>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"
To: Old Tube Radios <boatanchors@theporch.com>
From: Andre Guibert <aguibert@sympatico.ca>
Subject: German U505 Sub. Radio Room

Bonjour to All
Just came back from Chicago, lots of sunshine and
outstanding Museums.
The one that I did not want to miss was the Science and
Industry Museum and its U505 Sub on display.
Looking in the radio room, one of the radio seemed to
be a Fug16 and the one that I have looks very similar.
There was also a hand crank 78rpm record player that
must have only be used deep down or on a very calm sea.

Did not see anything for burst transmissions but an Enigma
Coding/Decoding machine was on the table.
Could not read the nameplates on the Tx/Rcvrs.
The Sound Room looked well equipped with bearing repeaters,
sonar controls etc.
Found out also that the main batteries voltage is 170V.
No mill. BA`s except an ARC5 sans dynamotor in fair shape
in the same cardboard box with a Meisner trans. with only
one plugin coil, all for 25dlrs.
Also a Wave Magnet receiver in a fairly good condition,
could not find a model type, for 35dlrs.
The two above items were at: The Good Old Days, antique
and collectables, 2138 W. Belmont ave. Chicago 60618
phone: 773-472-8837.
Has also a fairly extensive wood Zenith consoles and table
models with almost all of them in mint condition(With
prices to match).
Andre

From: jmccarty@lucent.com (John J Mccarty)
Date: Thu, 15 Oct 1998 13:24:08 -0500
Message-Id: <199810151824.NAA01562@nwsgpa.ih.lucent.com>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: PRC 10 - Set flame enable
Content-Type: text

Speaking of hot topics;

I have a pair of PRC-10 backpack radios. One of them workes fine. The other one sets the "C" portion of the large battrey pack in the bottom on fire. Before I realized this was happening, it also blew the balast tube in the "C" portion of my AM-573 supply. I checked the C line for shorts, tested good. Tube tests good in the tube tester. Both radios draw so much "C" current that they pin my 500 mA meter in xmit. What is the rated current for this lead on these radios?? Is there something I'm missing. The only other clue I have is that when the "bad" radio is in xmit, and the "good" radio is listening, I hear AM BC radio stations in the received audio on the "good" radio. Am ideas?

Tnx

John McCarty
n9hrt
jmccarty@lucent.com

End of BOATANCHORS Digest 2259
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